

United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

National
Wildlife
Research
Center



Wildlife Services Seeking Solutions Through Research

Studying Predator Behavior and Ecology to Improve Livestock and Wildlife Management

Contact Information:

Research Wildlife Psychologist

USDA/APHIS/WS/NWRC

Predator Ecology & Behavior Project, Utah State University

Room 163, BNR Building, Logan, UT 84322-5295

Phone: 435-797-2505 FAX: 435-797-0288

Website: www.aphis.usda.gov/ws/nwrc

National Wildlife Research Center Scientists Study Predation Behavior and Ecology

Wildlife Services' (WS) National Wildlife Research Center (NWRC) is the only Federal research facility devoted exclusively to resolving conflicts created by the interaction of wildlife and people through the development of effective, selective, and acceptable methods, tools, and techniques. The NWRC Logan, Utah Field Station facility is the leading coyote ecology research complex in the world.

Data on predator population dynamics, ecology, and behavior in relation to predation patterns on livestock, game species, and threatened and endangered species, are needed for effective depredation management. While many data exist, significant gaps remain with regard to predator-prey, predator-predator, and predator-livestock relationships. This project is adopting a multi-disciplinary approach to studying repellents and attractants and will involve NWRC chemists, physiologists, behaviorists, and wildlife biologists, using the kennel and pen facilities of the NWRC's Utah Field Station. Promising substances and strategies will be tested in the field by station scientists working in cooperation with WS operational personnel.

Groups Affected By These Problems:

Ranchers/livestock producers
Wildlife managers
Pet owners



Applying Science and Expertise to Wildlife Challenges

Population Analysis—NWRC scientists have made significant progress on the analysis and publication of a database on coyote-prey relationships. Efforts focus on the development of population models that are based on coyote spatial dynamics and population demographics. In addition, researchers are analyzing and summarizing available data on the effects of coyote removal on population demographics, movements, predation, and other areas of concern to WS.

Sterilization—Researchers are determining the circumstances where the presence or absence of pups is related to coyote depredation on domestic lambs on lambing ranges. These findings will assist in evaluating the feasibility of implementing sterilization and other control measures on livestock production areas, and will be used in developing a coyote predation management and population model.

Attractants and Repellents—Species-selective attractants are needed for coyote depredation management and the delivery of pharmaceutical substances (e.g., rabies vaccine, sterilants). NWRC scientists are identifying and evaluating taste and olfactory lures that will attract coyotes and influence coyote behaviors (e.g., chewing, biting, licking, rolling). In addition, NWRC scientists are identifying and evaluating chemical repellents for coyotes to develop substances that will reliably deter coyotes from consuming a variety of materials.

Major Research Accomplishments:

WS developed new color/taste attractants and odor lures to improve trap and M-44 success

WS field evaluated, in six states, synthetic odor lures to enhance performance of capture devices and deliver pharmaceutical substances such as vaccines

WS developed a database of coyote population demographics, movements, patterns of predation, and economic effectiveness of predation management

Selected Publications:

Kimball, B.A., J.J. Johnston, J.R. Mason, D.E. Zemlica and F.S. Blom. 2000. Development of Chemical Coyote Attractants for Wildlife Management Applications. Proceedings of 19th Vertebrate Pest Conference, March 6-9, 2000, San Diego, CA. pp. 304-309.

Pitt, W.C., F.F. Knowlton, A. Ogawa and P.W. Box. 2000. Evaluation of Depredation Management Techniques for Territorial Animals Using a Computer Model: Coyotes as a Case Study. Proceedings of 19th Vertebrate Pest Conference, March 6-9, 2000, San Diego, CA. pp. 315-318.

Meadows, L.E. and F.F. Knowlton. 2000. Efficacy of Guard Llamas to Reduce Canine Predation on Domestic Sheep. *Wildlife Society Bulletin* 28:614-622.